

World-class infrastructure aids research pursuits

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1

**Jaypee University of
Information Technology**

Department of Biotechnology

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Name of the Department:

Department of Biotechnology &
Bioinformatics

Courses: BTech in
biotechnology & bioinformatics,
and integrated MTech in

biotechnology

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By strengthening its specialized centers for research and by improving its world-class the No.1 private biotech school in India

The Department of Biotechnology at Jaypee University of Information Technology (JUIT) offers four-year BTech programs in biotechnology and bioinformatics, a five-year MTech x-year dual degree BPharm-MPharm course.

JUIT has been running post-graduate programs in biotechnology, bioinformatics and pharmacy-the three main pillars of bio-based industries-that provide a rare opportunity to faculties and students to learn with broad horizons and do projects in a holistic and conclusive manner. JUIT intends to strengthen research infrastructure in order to expose students to world-class research and also to provide them with hands-on training using

The biotech department receives about 4,000 applications every year for the 90 seats it offers. The department is equipped with 12-15 labs providing practical training in various areas of biotechnology. The bioinformatics curriculum includes courses on algorithm design, machine learning, computational high throughput screening and drug designing, ages.

Last year, JUIT has achieved several milestones in education and research. The Department of Biotechnology & Bioinformatics has got the Institutional Program Support for establishing the Centers of Excellence and Innovation in Biotechnology and funding to the tune of 8 crore was allotted jointly by the Department of Biotechnology, Government of India, and the Jaypee University. The center would be the first-of-its-kind in India, setup exclusively with modern research facilities to pursue advanced research in genomics, proteomics, metabolomics and bioinformatics of high value medicinal plants. The overall goal of this center would be to elucidate the missing links in the biosynthetic pathways of major chemical constituents of medicinal herbs so as to develop gene markers for the identification, cataloguing and conservation of genetically superior strains stern Himalayas.

So far, the faculties of the biotech department were awarded with R&D projects worth 4 crore from different funding agencies such as the DBT, DST, ICMR and DRDO. Three patents were filed last year. A new specialized center of research, 'Center of Genomics and Bimolecular Engineering,' at JUIT, will aim to strengthen modern areas of biotechnology such as metabolic engineering, synthetic biology and computational um enriches knowledge and skills of studentsâ€?

- Dr RS Chauhan, head, Department of Biotechnology

and Bioinformatics, JUIT

Q How do you promote the academia-industry relationship at JUIT?

The interaction between academia and industry is crucial, especially in the changing global employment scenarios. Industry has been raising concerns over the disproportion in the total engineering/science graduates passing out and their probability of getting recruited by companies. This problem can be tackled through interactions between industry and academia, so that intellectual and infrastructural resources of each can complement in bringing out best products and processes of practical value. Jaypee University of Information Technology (JUIT) has initiated several programs to interact with the industry, which include compulsory summer industrial training for students, regular scientific interactions with the industry personnel so as to prioritize our research programs, and to get support from the industry for our R&D activities. All these initiatives have been

implemented to open up our students to real world problems.

Q What are the strengths of biotech courses offered at JUIT?

JUIT has implemented biotech curriculum with a strong engineering base, which includes courses in electronics and communication, computer science and IT, materials science, and biomathematics, in addition to core courses in biotechnology. The curriculum enriches the knowledge and skills of students so that they can excel not only in biotech but also in other emerging branches such as nanobiotech and biomedical engineering.

A distinctive feature of our BTech curriculum is the project work in last two semesters wherein the students are asked to come up with a research problem aimed at addressing unanswered questions in any area of biological sciences or any other branch of science and technology. The biotech department has introduced an innovative system of elective modules to the final year students wherein the students are given a choice of choosing modules to strengthen their knowledge and skill profile in a particular technology. The elective module system complements the theoretical knowledge of students related to their project work. In addition to undergraduate programs, the JUIT runs PhD program in biotech, bioinformatics and pharmacy with a provision of teaching assistantship of `15,000 per month to scholars analogous to American Universities so that the students get an opportunity to conduct labs while pursuing their research.

Q What are your views on the need for regulation of private biotech institutes?

I would be very happy to have stringent regulations on quality of education not only in private biotech institutes, but also in government institutes as well. Barring a handful of universities/institutes in India, the biotech educational programs are run without adequate and appropriate infrastructure, thereby resulting in grossly under-qualified and under-trained manpower. Most of the educational institutes, both private and government, are producing graduates who are more of bench workers rather than thinkers or planners. Biotech or any other branch of science or engineering requires expertise at both these levels with sufficient academic competence and vision to identify a problem and design a strategy to solve it. We at the JUIT are training and producing BTech/MTech graduates who are more of thinkers and planners.

 JUIT provides a pleasant environment that is conducive to the holistic growth of an individual. The college
the overall development of an individual for a promising career growthâ€?
h, final year student of integrated MTech in biotech, JUIT
n New Delhi